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REMARKS

Entry of this Amendment is proper since it does not raise new issues and does not require further search by the Examiner.

Claims 1-67 are all the claims presently pending in the application. Claims 1, 12, 23, 34, 45, 53-55 and 62-63 have been amended to more particularly define the invention.

It is noted that the claims have been amended solely to more particularly point out Applicant's invention for the Examiner, and not for distinguishing over the prior art, narrowing the claim in view of the prior art, or for statutory requirements directed to patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 1-61 and 65-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tognazzini, et al. (U.S. Patent No. 5,886,683) (hereinafter "Tognazzini") in view of Black et al. (U. S. Patent No. 5,802,220). Claims 62-64 and 67 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tognazzini, et al. (U.S. Patent No. 5,886,683) (hereinafter "Tognazzini") in view of Black et al. (U. S. Patent No. 5,802,220) and further in view of Handel et al. (U. S. Patent No. 6,195,651).

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as recited in claim 1 and similarly recited in claims 12, 23, 34, 45 and 53-55) is directed to a system for unobtrusively detecting a subject's level of interest in media content. The system includes means for detecting a subject's attention to the media content, means for measuring the subject's relative arousal level, and means for determining the level of interest based on information regarding the subject's arousal level and the subject's attention to the media content. Importantly, the means for determining the level of interest adaptively infers the level of interest.

Conventional systems for measuring a subject's interest often estimate a mental decision by monitoring a subject's gaze direction and EEG to detect when a subject is looking

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at a visual target. Other systems remotely determine a subject's emotional state by broadcasting a waveform of predetermined frequency and energy at the subject, and analyzing the emitted energy to determine physiological parameters (e.g., respiration, pulse, blood pressure, etc.). However, these systems cannot adaptively infer the user's level of interest and thus, cannot adaptively display information in which the user has a high level of interest (e.g., display mainly information in which the user has a high level of interest).

The claimed invention, on the other hand, includes a means for determining the level of interest which adaptively infers the level of interest (Application at page 17, line 9-page 20, line 11). This allows the claimed invention to "learn" a user's particular interest, such that the system can adaptively provide information regarding such interests to the subject (Application at page 22, line 16-page 23, line 6).

II. THE ALLEGED PRIOR ART REFERENCES

A. The Tognazzini and Black References

The Examiner asserts that Tognazzini would have been combined with Black to form the claimed invention of claims 1-61 and 65-66. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Tognazzini discloses a method and apparatus for determining what aspect of computer operation the user is interested in and responding accordingly (Tognazzini at col. 5, lines 57-59). Specifically, the apparatus may include a gaze-tracking device for monitoring a user's gaze.

Black, on the other hand, discloses an apparatus for tracking facial motion through a sequence of images (Black at Abstract).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different problems and solutions.

Specifically, Tognazzini is directed to a apparatus which uses a gaze-tracking system to assess a level of interest, whereas Black is directed to a system for recognizing facial

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expressions. Therefore, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. In fact, contrary to the Examiner allegations, neither of these references teach or suggest their combination. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, neither of these references nor their combination teaches or suggests “*wherein said means for determining said level of interest adaptively infers said level of interest*”, as recited for example, in claim 1, and similarly recited in claims 12, 23, 34, 45 and 53-55.

As noted above, unlike conventional systems for measuring a subject's interest which cannot adaptively infer the user's level of interest and thus, cannot adaptively display information in which the user has a high level of interest (e.g., display mainly information in which the user has a high level of interest), the claimed invention includes a means for determining the level of interest which adaptively infers the level of interest (Application at page 17, line 9-page 20, line 11). This allows the claimed invention to “learn” a user's particular interest, such that the system can adaptively provide information regarding such interests to the subject (Application at page 22, line 16-page 23, line 6).

For example, in one exemplary embodiment, the claimed invention uses a Bayesian Belief Network to determine the level of interest based on the information regarding the subject's arousal level and the subject's attention (e.g., see Application at Figure 3).

Clearly, this feature is not taught or suggested by the cited references. Indeed, Applicant notes that in paragraph 20 on page 5 of the Office Action, the Examiner expressly concedes that neither of these references, nor their alleged combination teaches or suggests this feature.

The Examiner alleges that the references “mention determining level of interest based on user information”. However, merely utilizing “user information” (e.g., user's reading speed) to

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determine interest clearly does not teach or suggest adaptive learning. In fact, the systems described in the cited references are completely unrelated to adaptively inferring a level of interest, as in the claimed invention.

Therefore, Applicant submits, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Handel Reference

The Examiner asserts that Tognazzini would have been combined with Black, and that the alleged Tognazzini/Black combination would have been further combined with Handel to form the claimed invention of claims 62-64 and 67.

First, Applicant notes that, as set forth in the Declaration filed herein on April 28, 2003, the claimed invention was completed in the United States before March 23, 1998 or alternatively was conceived prior to March 23, 1998, coupled with due diligence from just before March 23, 1998 to the filing date (e.g., constructive reduction to practice) of the Application on February 25, 1999. Applicant points out that this Declaration includes a disclosure entitled "*A system for real-time determination of a users (sic) level of interest to presented information*" which describes the claimed invention to include determining a level of interest by adaptively inferring the level of interest (e.g., see disclosure at fourth paragraph on page 5). Namely, the disclosure states:

"[t]he next step is to merge this information into a measure of interest level. [This] is accomplished [by using] a neural net with the 11 inputs (blink rate, gesture distances, eyebrow distances, and mouth distances) 20 hidden units and 3 outputs. The outputs correspond to interested, uninterested and neutral".

Thus, Applicant submits that Handel, which has an earliest U. S. filing date of November 19, 1998, has an effective reference date which is clearly after the date of invention of the claimed invention. Thus, Handel is not prior art against the claimed invention.

Further, even assuming (arguendo) that Handel has an effective reference date that is

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before the date of invention of the claimed invention, Applicant submits, that Handel would not have been combined with any alleged Tognazzini/Black combination and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Handel discloses an Internet-based application for delivering services and providing a personalized experience for each customer via a personal web site (Handel at col. 29, lines 23-27).

Applicant submits that these references are directed to different problems and solutions and, thus, would not have been combined as alleged by the Examiner. Specifically, in contrast to Tognazzini which is related to gaze-tracking and Black which is related to recognizing facial expressions, Handel is related to a personal web site. Therefore, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. In fact, contrary to the Examiner allegations, neither of these references teach or suggest their combination. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, neither Tognazzini, nor Black, nor Handel, nor any alleged combination of these references teaches or suggests "*wherein said means for determining said level of interest adaptively infers said level of interest*", as recited for example, in claim 1, and similarly recited in claims 12, 23, 34, 45 and 53-55.

As noted above, unlike conventional systems, the claimed invention includes a means for determining the level of interest which adaptively infers the level of interest (Application at page 17, line 9-page 20, line 11). This allows the claimed invention to "learn" a user's particular interest, such that the system can adaptively provide information regarding such interests to the subject (Application at page 22, line 16-page 23, line 6).

Clearly, these features are not taught or suggested by Handel. Indeed, the Examiner attempts to rely on Figures 10A, 13, 25 and column 29, lines 30-67 and col. 30, lines 1-15 and 33-

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49 to support his position. However, nowhere do these drawings or passages teach or suggest adaptively inferring a level of interest.

For example, Figure 10A merely discloses a "customer profile database 1060" which contains personal information such as name, address, personal preferences, etc. (Handel at col. 30, lines 41-54). The system may use user content preferences to format a web page (e.g., Handel at col. 31, lines 1-25, but nowhere does Handel teach or suggest feeding back information into the database 1060 (e.g., based on an earlier behavior of the user) in order to update the database 1060. That is, the format of the web page will remain the same until the customer profile database 1060 is manually updated. That is, the Handel system does not utilize adaptive learning.

Similarly, none of the other drawings or passages on which the Examiner attempts to rely teach or suggest this novel feature. Indeed, even assuming (arguendo) that Handel may teach or suggest formatting a web page based on user content preferences, nowhere does Handel teach or suggest adaptively inferring a user preference to format a web page. That is, the Handel system in no way "adapts" by "learning" a preference of the user. In fact, Handel is completely unrelated to the claimed invention.

Therefore, Applicant submits, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-67, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 09-0441.

Respectfully Submitted,



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1/24/05

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment was filed by facsimile with the United States Patent and Trademark Office, Examiner Steven P. Sax, Group Art Unit # 2174 at fax number (703) 872-9306 this 24th day of January, 2005.



Phillip E. Miller
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